



## PATENT ABSTRACTS OF JAPAN

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(54) CAM RING FOR LENS BARREL

(57) Abstract

**PURPOSE:** To make a contact surface with a cam pin surface sbut and to manufacture a cam groove by an inexpensive material by making the whole of a cam surface perpendicular to an optical axis.

**CONSTITUTION:** The cam surface formed by using a synthetic resin material is divided to two stages in the perpendicular direction to the optical axis. Since the cam groove is shaped so that a mold(metallic mold) forming the first side surface(left side surface) of the cam surface can be drawn in the second direction (right direction) and a metallic mold forming the second side surface(right side surface) of the cam surface can be drawn in a first direction (left direction), such simple structure that the cam surface can be opened in the first and the second directions(left and right) is obtained. Besides, since the whole of the cam surface becomes vertical to the optical axis, the contact surface with the cam pin 4 can be made the surface abutting. That means, since the metallic mold is drawn in the direction where the cam surface does not exist, the part thereof is not made thick and a one group lens moving frame 2 can be made lighter in weight. Besides,

since a contacting area with a zoom driving ring 3 or the like is made small, smooth rotation is attained.

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